

Noank Elementary School Building and Site Analysis

**Prepared by
Town of Groton
Public Works Department**

July 2010

INTRODUCTION

The former Noank Elementary School is located in the Noank Fire District on 6.19 acres of land between Williams Street, Smith Lane and Harbor Court in the Town of Groton. In compiling this report, the Department did not engage the resources of an architect or engineer. The conditions of the existing structure, site and mechanical systems identified are the opinion of the department and were based on observations or as in the case of the operation costs, actual experience. Attached to this report, as an appendix, are photographs referenced in the report.

The Town assumed control from the Board Of Education in July 2008 after the Board closed the school upon the completion of the Northeast Academy Elementary School. It lay vacant from July 2008 until December 2008, when, for 14 months, it was the temporary home of the Groton Senior Center during the construction of the new facility. For this temporary use, minor modifications were made to the site and the building. These were:

- Construction of a paved 24 vehicle parking lot (since removed by a requirement of the Special Permit issued by the Noank Zoning Commission)
- Modification to the existing kitchen area that include an exhaust hood, plumbing and electrical
- Installation of window and portable air conditioners (some have been relocated)
- Modification to several toilet facilities to accommodate handicapped individuals
- Modifications to several interior rooms to accommodate programs such as fitness

The building is currently vacant.

History

The original portion of the school was built in 1947. It consists of concrete slab with masonry wall construction. The original portion was basically the office area, classrooms, boiler room and gymnasium. Two additions were added in 1963 (5 classrooms) and 1968 (6 classrooms). Of interest is the fact that the "new" portion of the building is 42 years old. (See photos on pages 2 – 3 of attached briefing.)

The gross building area is 28,635 square feet plus there is approximately 2,000 square feet of unfinished basement which houses the boiler room. It was used in the past for storage.

The current configuration is 19 classrooms, 5 office/administration areas, a gym with small kitchen and 4 gang toilet facilities. Included in the 19 rooms are 2 kindergarten rooms each with a child bathroom. One toilet is also found in the former teacher's lounge and in the former nurse's office (these two rooms are include in the 5 office/administrative areas).

MECHANICAL SYSTEMS

Heating

The heating plant consists of one HB Smith and one Weil-McClain oil-fired boilers, which produce all the building's heat and also domestic hot water through an indirect heater. Hot water is pumped to the air handling unit coils and to perimeter radiation through in-line pumps. When the boilers are not used for heating, hot water is provided by 50 gallon oil fired water heater.

The Weil-McClain boiler has blown a main gasket seal. As it is not needed to provide minimal heat to the building, and it was deemed too expensive to diagnosis and repair, it was brought off-line.

Groundwater seeps into the boiler room from beneath the school and was controlled by a sump pump. During the heavy rains of March 29 – 30, 2010, there was over a foot of water in the boiler room which destroyed the following: 2 condensate pumps, 2 circulator pumps and domestic hot water burner/motor. The estimate to repair or replace all these items is \$13,475. (See photos on pages 4 - 5 of attached briefing.)

The radiant floor heating system that is piped through the building via a crawl space is not useable due to leaks in the piping. Groton Public Schools stopped using it many years ago.

Air Conditioning Systems

The building has no central air conditioning. There were 10 split system units installed in three rooms when it operated as a Senior Center. (See photos on pages 6 - 8 of attached briefing.) Four of these systems have been relocated to the Town Hall to replace failing systems in the IT area.

The gym has two very large portable units that were installed when it was used as a Senior Center.

Ventilation

The gym has 1 large ceiling fan. The stage area has an air handling system. The restrooms have vents but are not forced air systems. The rest of the building has no ventilation systems.

Main Electrical Service

The main electrical service is fed from a pad-mounted transformer on the east side of the building. The service is 800 ampere (1000 amperes with 800 ampere main circuit breaker) at 208 volt/3-phase. (See photo 9 of attached briefing.)

There is no emergency generator or permanent plug to connect a portable generator.

Information Technology

There is very limited wiring in the classrooms. Four areas were wired for connection to the Town's network system. They were connected by DSL because it was a much cheaper option than fiber optic cable. DSL was \$50 per month using Thames Valley Communications. Fiber optic would have cost over \$25,000 which was unreasonable for the short duration of occupation by the temporary Senior Center. The DSL connection has been terminated. Future service into the building would depend on the needs of the user and could range from cable modem to DSL to fiber optic depending on how much one would want to spend. Depending on the option, the existing wiring could be rendered useless. (See photos on pages 10 - 11 of attached briefing).

Each classroom is wired for cable television but the service has been discontinued. Thames Valley Communications and Comcast serve the area.

Water/Sewer

Water is provided by Noank Water District by a three inch main service pipe into the building.

Sanitary sewer exits the building to the south and ties to the laterals in Smith Street.

The water distribution piping is copper and is in fair condition. There is some evidence of corrosion on the piping. The piping was typically insulated. The waste and vent piping is cast-iron.

The kitchen has an in-slab grease interceptor that is cleaned semi-annually.

Heating Oil

Oil is stored in a 5,000 gallon, fiberglass underground tank located to the west of the boiler room. The tank was installed in 1990, and should have another 10 years of useful life (typical warrantee for fiberglass tanks is 30 years). Oil is transferred to the boilers by a duplex pump system in the boiler room.

Building Controls

The building controls have been retro-fit with Alerton DDC controls that are adjusted and monitored at Public Works through a modem. There is limited adjustability at the thermostats by the users.

Lighting

Interior lighting is mostly fluorescent fixtures with the T-8 (32 watt) bulbs. There is some narrow light provided by clerestory windows in the main hallway.

Emergency Lighting

The emergency lighting consists mostly of wall pack units, with remote batteries.

Fire Alarm

The fire alarm system is a Simplex system with pull stations at the exits, and strobes and horns for notification. There are no strobes or speakers in the classrooms. There is no voice evacuation in the facility. There are smoke detectors throughout the facility that were installed for the temporary Senior Center.

Fire Protection System

This building is not protected by a sprinkler system. There is a fire hydrant from an 8-inch line to the west of the building. There is a Kidde chemical extinguishing system for the hood.

Communications

There is an original paging system, which is no longer used.

BUILDING/SITE**Building Envelope**

The entire wooden and metal exterior surfaces need painting. The abatement of lead paint may be necessary but it is unknown at this time. There are structural cracks in the brickwork and areas where water has caused structural damage. (See photos on pages 12 - 15 of attached briefing.)

The roof, a mixture of built up and membrane is approximately 28,000 SF and leaks have developed in at least 4 areas, the kitchen, the gymnasium, an office, and the hallway between the gymnasium and the newest addition. The entire roof is in need of replacement; at a minimum there are 4 areas that need extensive patching. One of the issues with these older flat roofs is the inability to add adequate insulation to the roof. It appears that the roof pitches are not in proper alignment and/or the existing drains are plugged. (See photos on pages 16 - 19 of attached briefing.)

The windows (2,896 square feet) are single pane and not energy efficient or hurricane resistant.

Interior

Although the walls and floors were maintained and are in good shape, the failing of the roof is causing the ceilings to deteriorate and thus they are in poor shape. (See photos on pages 20 - 24 of attached briefing.) Many ceiling tiles are missing or stained from the many roof leaks.

The "newer" section of the school has 1,300 square feet of asbestos floor tile. While is good condition, any work in this area must take that into account.

The gymnasium is not basketball regulation sized. It has vinyl floor tiles. It has very little room between sidelines and walls making it less safe for playing sports in the gymnasium. (See photos on pages 25 - 27 of attached briefing.)

There is a small kitchen with no appliances and a work area with a dishwasher. (See photo on page 28 of attached briefing).

The door hardware for many of the adjacent spaces is not handicapped accessible. The water fountains are not mounted at handicapped accessible height.

There are issues with the number and location of the electrical outlets and data jacks. Miscellaneous surface mounted installations and an electrical outlets retrofit was executed in the past to meet short term needs, not long term modern use.

The toilet facilities consist of 4 rooms. The handicapped toilets were established to current code when the building was used as the temporary senior center. The other toilet rooms are dated, with metal dividers showing rust.

Site

While the interior operational level of the building is on one level – the primary entrances to the building requires one to walk up or down steps. A handicap ramp was installed for the temporary senior center and remains on-site. (See photo on page 29 of attached briefing.)

The building has 48 parking spaces which includes 7 handicap spaces.

A play structure that is up to current code is located to the west of the main entrance.

There is an exterior walk-in refrigerator that was installed for the temporary Senior Center. (See photo on page 30 of attached briefing.)

ENVIRONMENTAL

The building has not been examined for radon gas, molds and mildews, PCB, or lead. It can be assumed that all of these items in some quantities are present.

PERMITTING/ZONING/FIRE CODE/BUILDING CODE

Any activity in the building needs permitting and zoning approval from Noank Fire District.

Building code (construction) is permitted the Town of Groton Office of Planning and Development Services.

Fire code enforcement is provided by the fire marshal of the Noank Fire District.

OPERATIONAL COSTS

Grounds

The grounds are maintained under the Town's Landscape and Site Maintenance contract with Spanos Landscaping for \$326.56 per month during the cutting season.

Utility Costs

FYE08 (as vacated school)

- 4,900 gallons heating oil \$10,175
 - 8,000 kwh \$1,617
-

FYE09 (as vacated school – 6 months)

- No heating oil
- 7,520 kwh \$1,607

FYE09 (as temporary senior center – 6 months)

- 13,199.7 gallons heating oil \$40,121
 - 62,347 kwh \$11,640
-

FYE10 (Jul-Feb) (as temporary center)

- 8,987 gallons heating oil \$23,895
- 97,554 kwh \$16,660

FYE10 (Mar- May) (as vacated school)

- 1741 gallons heating oil \$4621
 - 1,390 kwh \$237
-

Opinions of Cost

The items identified below should not be construed as the only costs to reuse the structure. Since the building is vacant, any use may dictate that the facility and site (or portion thereof) be brought up to the current Building Code and site plan requirements of Noank Zoning.

As a point of reference, the cost to demolish Eastern Point School was \$7.83/square foot. This cost did not include restoring the site as another school was being built in the same footprint. The site restoration could cost another \$3/ square foot. At \$7.83 per square foot, it would cost approximately \$240,000 to demolish only.

Roof

Using a calculator at <http://www.coolflatroof.com/roofing-price-calculator.php>, the cost to replace could range from a very low of \$400,000 which represents ideal conditions and replacement of the membrane to \$1.6 million for more difficult structural repairs.

Windows

The estimated replacement cost with energy efficient, debris resistant windows is approximately \$125 per square foot or \$362,000 for this building.

Abatement of Asbestos Floor tile

The cost to abate asbestos tile at William Seely School was \$5 per square foot in 2006. The cost for the 1,300 sf would be \$6,500 for removal only. Another floor covering would need to be installed.

Noank Elementary School

Building Condition
As of June 1, 2010



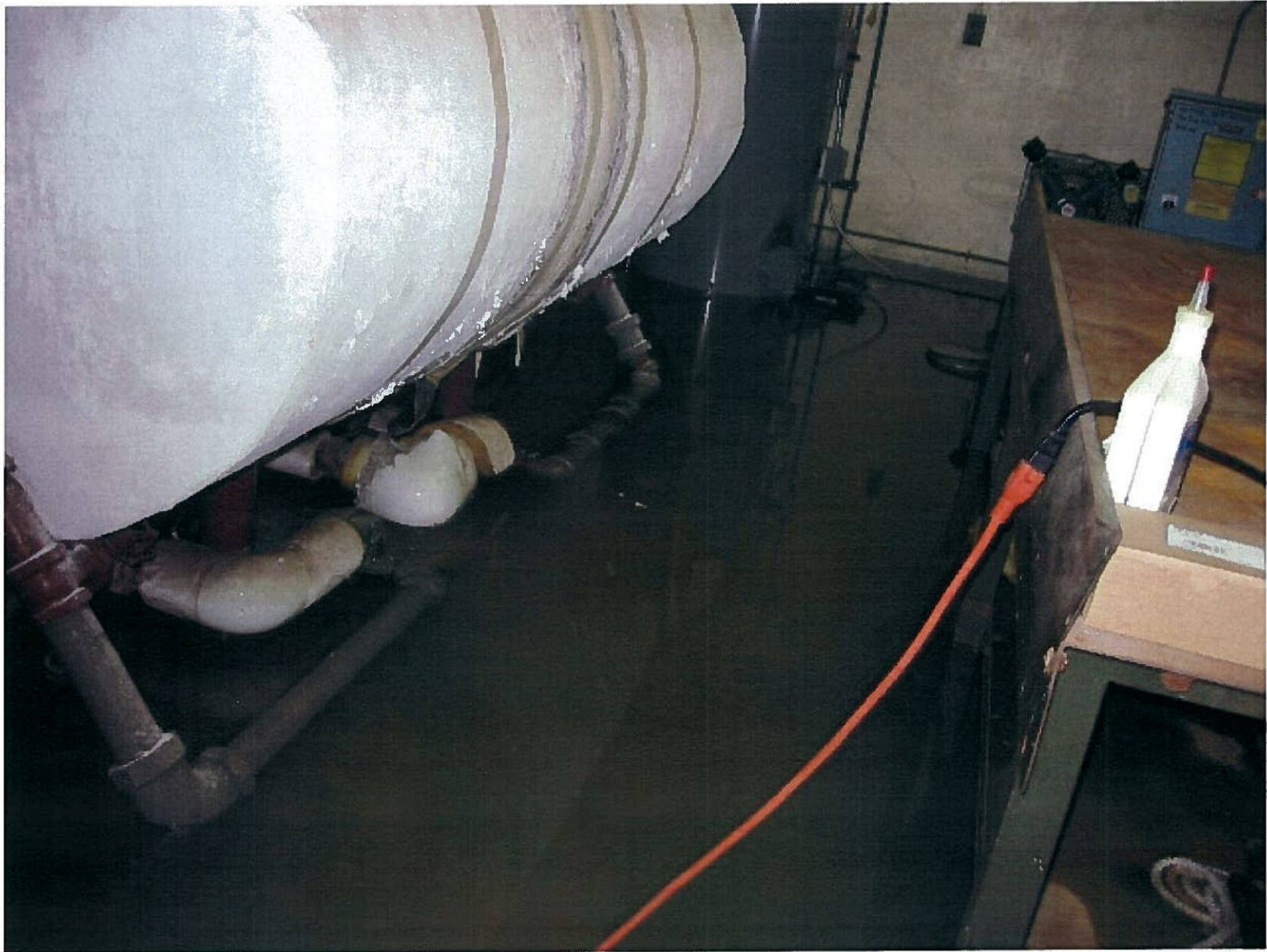
The former Noank Elementary School is located in the Noank Fire District on 6.19 acres of land between Williams Street, Smith Lane and Harbor Court.



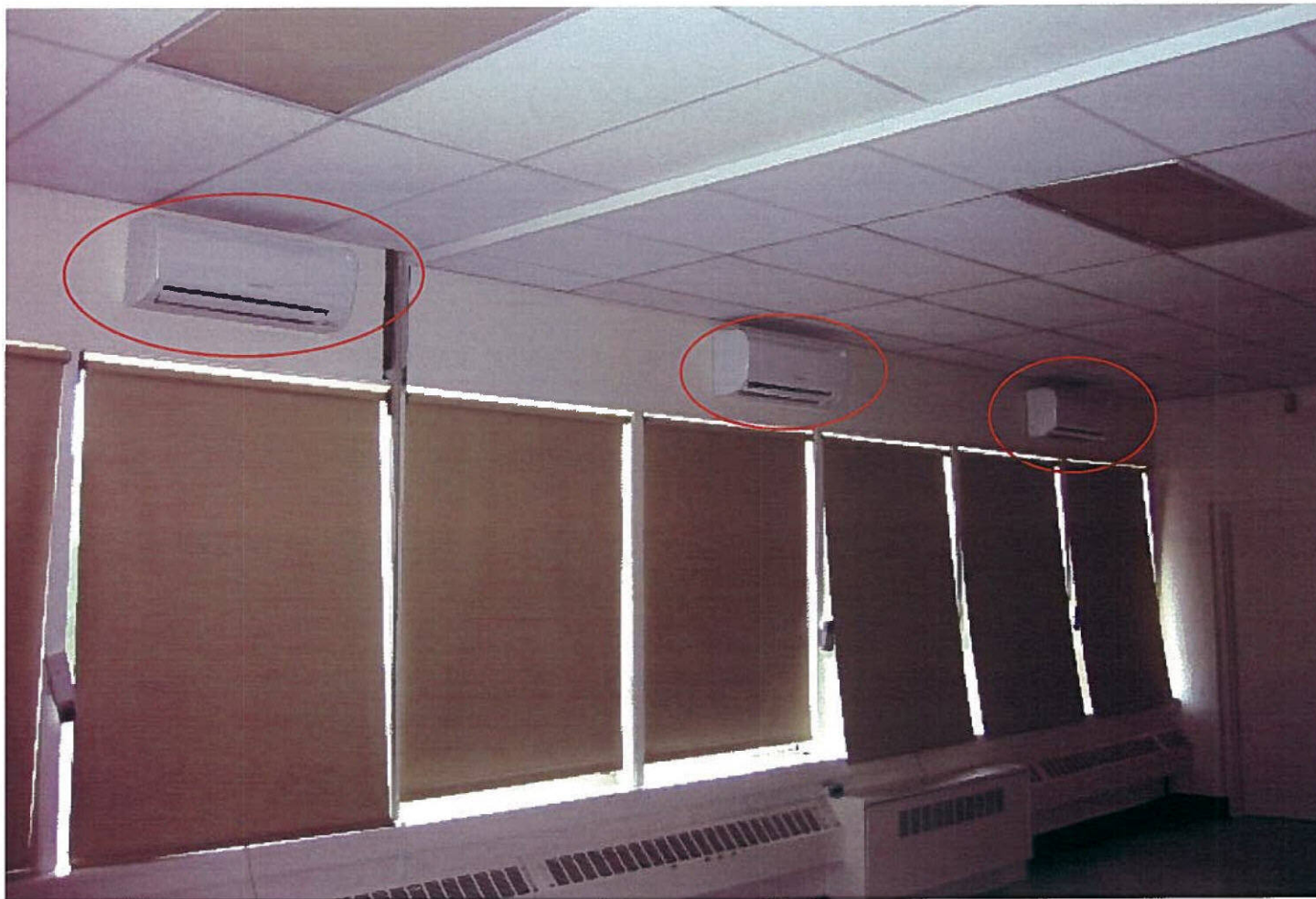
The old front entrance to the school when
Smith Lane went through to Williams Street.



Flooded Boiler Room



Flooded Boiler Room



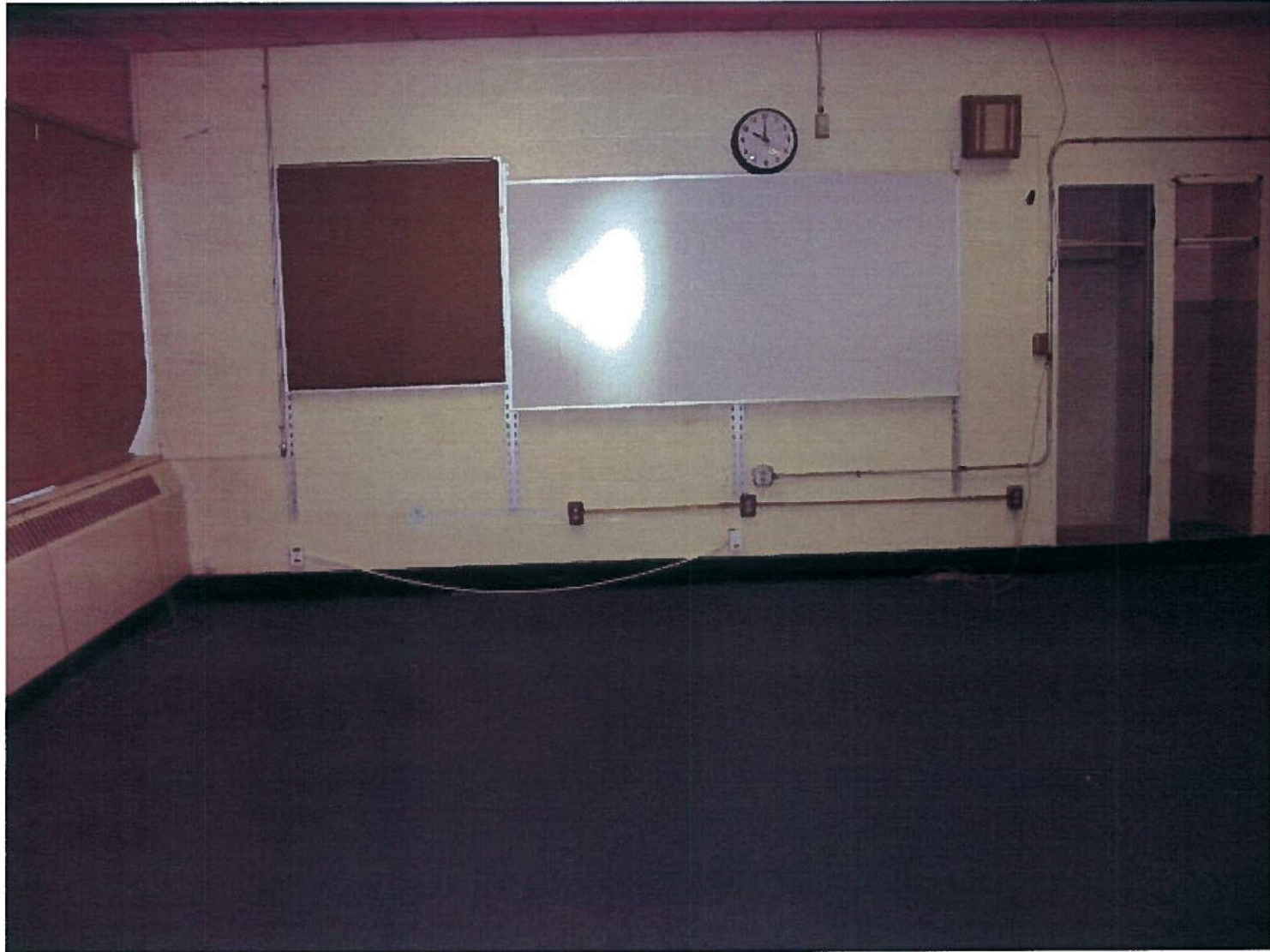
Three split system air conditioners in the classroom that was modified into a fitness room for the temporary Senior Center. Four split systems will be moving to the Town Hall to IT server room.



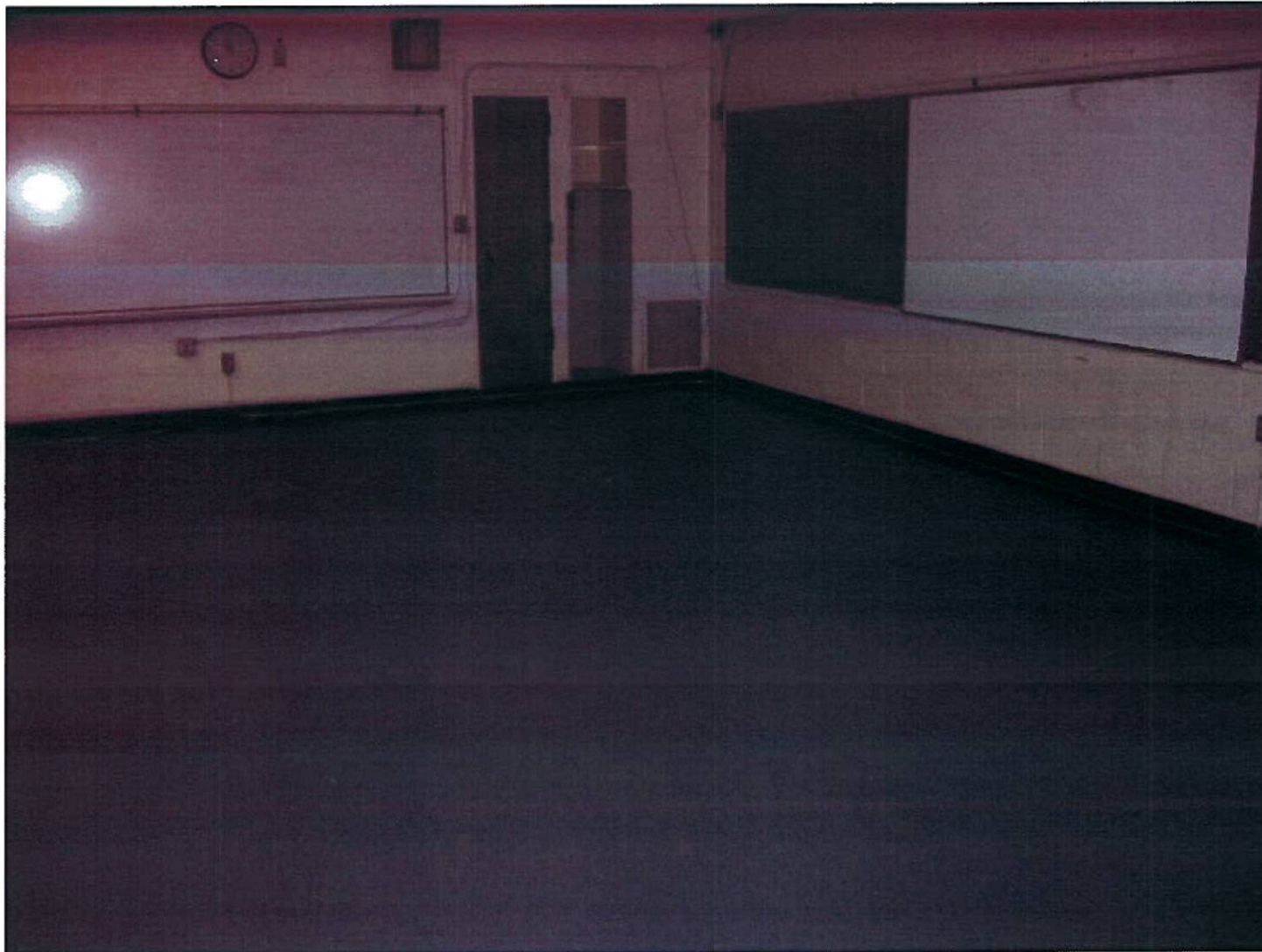
Three split system air conditioners in the old library room that was modified into the computer training room for the temporary Senior Center. Four split systems will be moving to the Town Hall to IT server room.



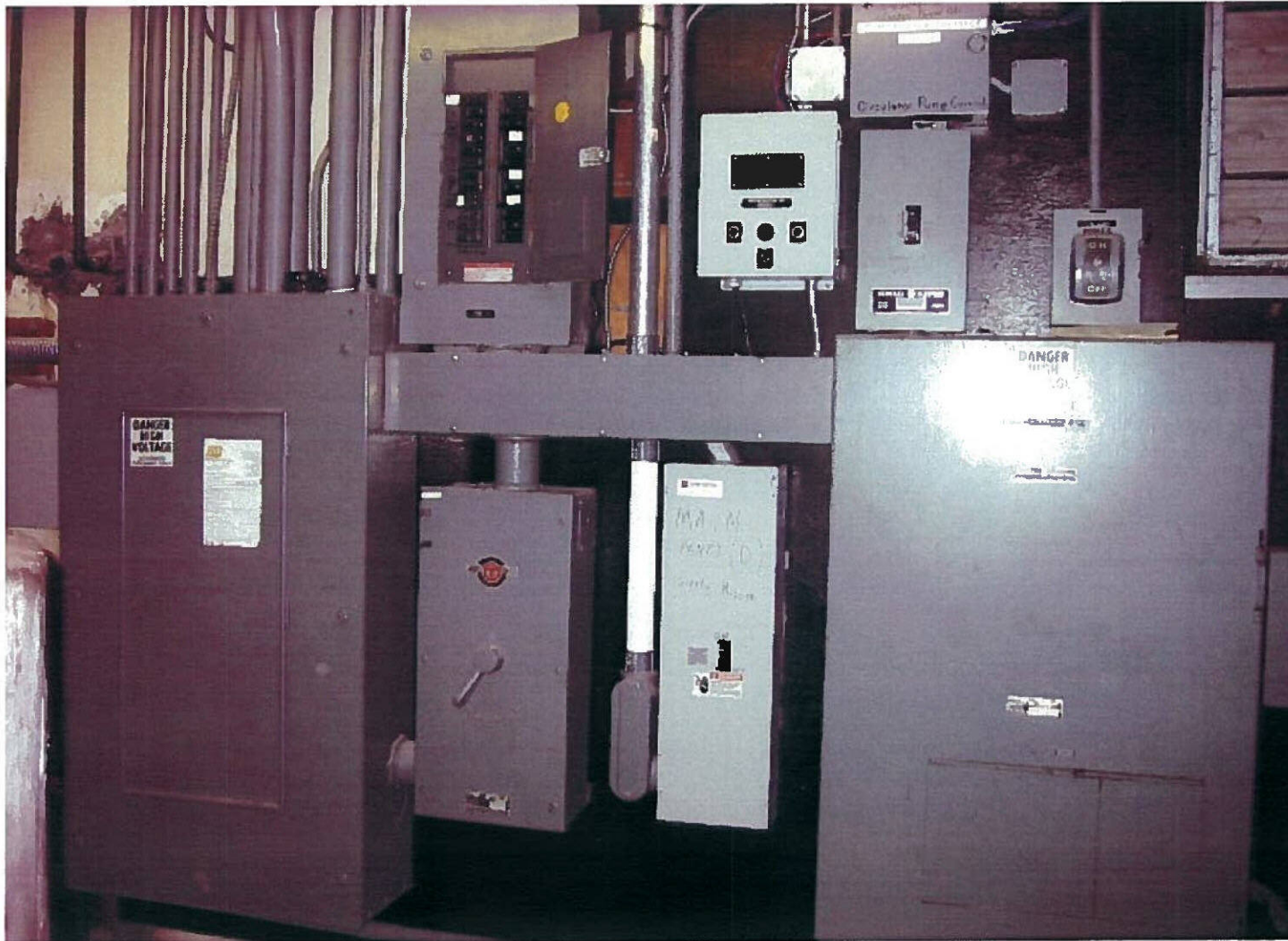
One split system air conditioners in the old Library Office that was used for the computer training for the temporary Senior Center. Two split systems will be moving to the Town Hall to IT server room.



Classroom – this one is wired for computer network and cable and has at least 5 double outlets in this classroom



Classroom – this one is wired for cable and has at least 3 double outlets in this classroom



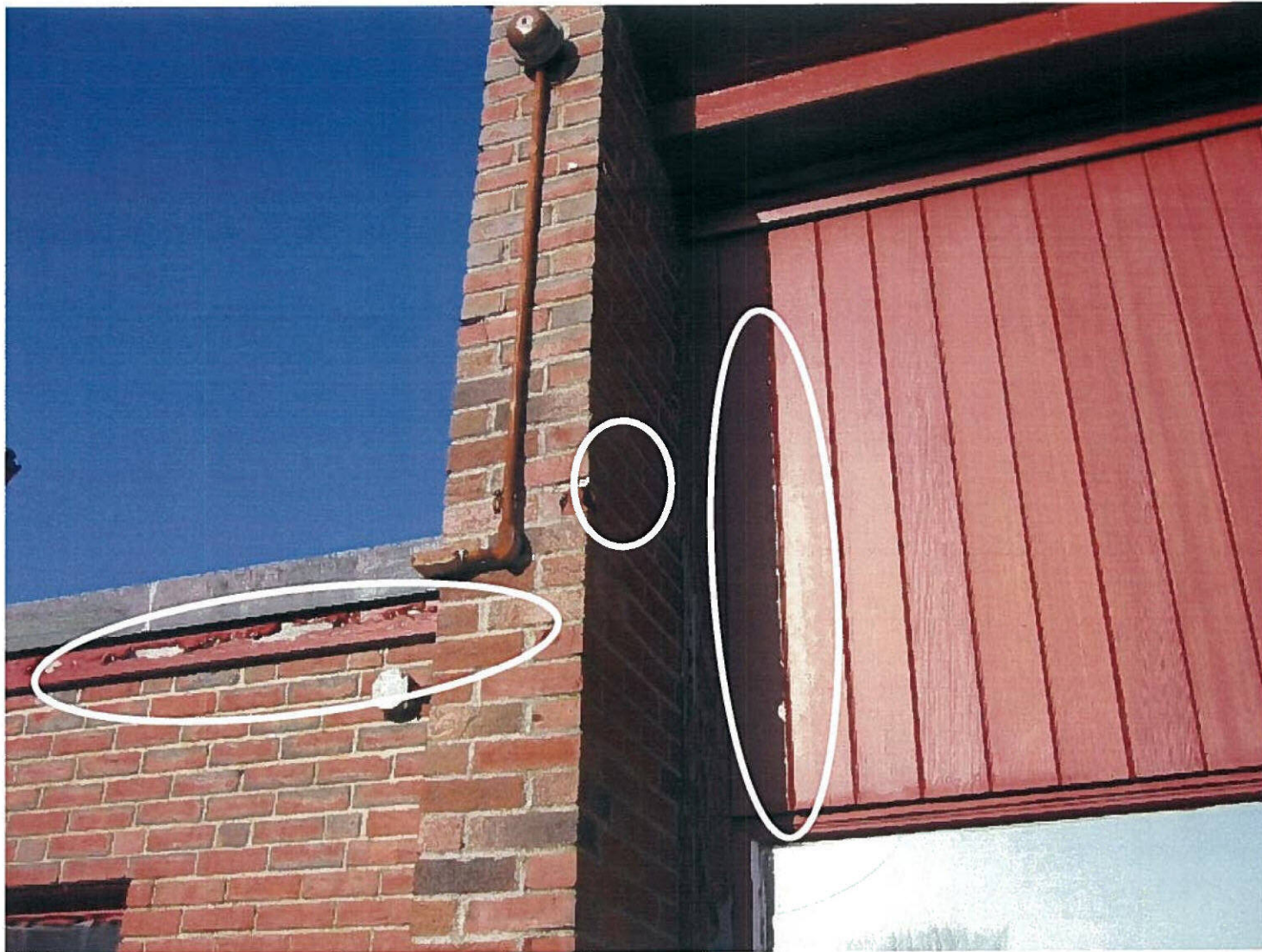
The electrical service located in the mechanical room which floods with high groundwater. The service 208 volt – 3 phase.



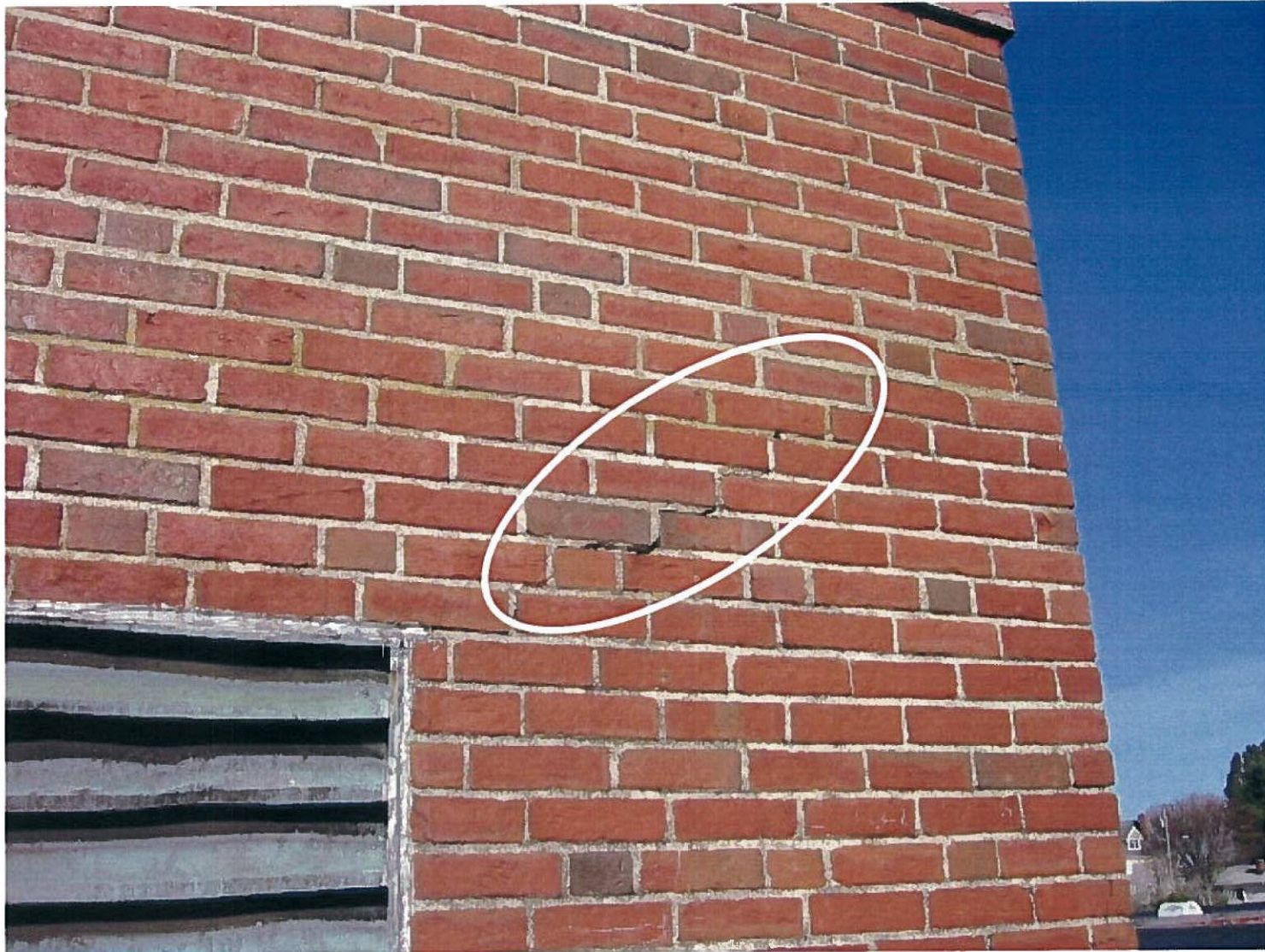
Chipping paint – single pane windows – no central air conditioning



Fascia board needs replacement – failure in brickwork structure



Fascia needs replacing – brick work failing – water damage at joint



Structural crack in brickwork



Old poorly designed roof with clogged drains - chipping paint – single pane windows



Numerous roof patches that continue to fail



Failing roof structure



Failing roof structure



Failing roof structure – causes failure inside



Failing roof structure – causes failure inside



Roof leak in the Kitchen on May 27, 2010



Failing roof structure – causes failure inside



Roof leaks in the Gymnasium.
See previous photo to see where ceiling tile went.



Gymnasium Floor – 12 inch square vinyl tile



Gymnasium is small. The basketball court is not regulation size. Old backboards, no area outside the lines and a stage on one end.



Gymnasium no area outside the lines between wall (approximately 18 inches)
This photo also shows the ceiling tile that fell to the floor due to roof leak.



Dishwasher in the kitchen – this was installed for the temporary Senior Center



A handicap ramp was installed for the temporary Senior Center.



A walk in refrigerator was installed for the temporary Senior Center.